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Museology, the Anthropocene, and the Huia: some Art-Historical perspectives on de-extinction

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[SLIDE] This paper seeks to bring some art historical and museological perspectives to bear on discourses surrounding the highly controversial idea of de-extinction. Many discussions arguing for *why* extinct species should be recovered, and *how* this might be done, implicitly or explicitly revolve around questions of how such species "look". However, despite the centrality of this notion, it is frequently treated in an uncritical way – as stable, quantifiable, and knowable. This situation is further vexed by the frequent incompleteness of visual and material records pertaining to extinct species (and this is to say nothing of records of other aspects of them, for example how they sounded, how they moved, and what their scent was – characteristics that play crucial roles in both intra- and interspecies interactions). A case in point is the huia, the principal example I refer to in this paper.[1] The huia was a relatively sizeable wattlebird endemic to Aotearoa New Zealand, which was last confirmed sighted in 1907 and was presumed extinct soon after (though occasional unconfirmed sightings occurred as late as the 1930s – a fact which in itself raises questions surrounding the role of "legitimacy" in what gets to be considered as credible scientific evidence).[2] The

[1] It should be noted that this article is not seeking to comment upon the advisability or otherwise of de-extincting the huia; rather, the huia offers a rich and complex case study which demonstrates various issues that I am arguing are important to debates around de-extinction.
[2] For discussions of how notions such as legitimacy and credibility get to police the boundaries of scientific discourse, see Thomas F Gieryn, *Cultural boundaries of science: credibility on the line* (Chicago and London: 1999).

huia has been proposed as a candidate species for de-extinction, and in terms of its cultural significance (especially to Ngāti Huia), its reported behavioural traits, and its biological specificities, the bird is well-placed as both a charismatic and, scientists tell us, relatively practicable option. The other strand to my discussion seeks to examine alignments between debates in ecocriticism and museological theory. With the politics of preservation being central to both, I hope to outline how museological ideas might productively complicate, lend insight into, and critique certain issues relating to de-extinction.[3] For proponents of de-extinction and its detractors alike, robust debate around all its facets and entanglements is essential, especially given the high stakes.

[SLIDE] The urgent need to bring an holistic critical attention to bear on de-extinction – including diverse perspectives from the arts and humanities – stems from the fact that it is no longer in the realm of science fiction, but has already started. Attempts to back-breed a Plains zebra species towards the *likeness* of the extinct Quagga sub-species have been underway in South Africa since 1987, and in 2003, the Pyrenean ibex became extinct for the second time, after a live calf produced using cloning techniques survived seven presumably very difficult minutes before dying on account of breathing difficulties. These are just two of a substantial number of recent or ongoing projects relating to de-extinction, and a range of different species is being looked at.[4]

My paper considers de-extinction as an archetypal phenomenon of the Anthropocene, a term used here in an expansive way. It was coined in relation to geology,[5] but since this time its meaning has diversified in various directions from the initial stratigraphical sense. Timothy Clark provides a useful overview of the various ways in which the term "Anthropocene" is used, noting how it "evades normal categories of attention".[6] As he describes, "The term has rapidly become adopted in the humanities in a sense beyond the strictly geological. Its force is mainly as a loose, shorthand term for all the new contexts and demands – cultural, ethical, aesthetic, philosophical and

[3] This might in turn shed further light on certain notions and commonplaces within the fields of art history and museology.
[4] Rich and critically nuanced discussions of such initiatives can be found in Amy Fletcher's book *Mendel's Ark: biotechnology and the future of extinction* (New York: 2014).
[5] See Paul J Crutzen, "Geology of mankind" in *Nature*, vol.415, 3 January 2002, p.23.
[6] Timothy Clark, *Ecocriticism on the edge: the Anthropocene as a threshold concept* (London: 2015), p.x.

political – of environmental issues that are truly planetary in scale…".[7] Nearly all of the candidate species for de-extinction disappeared – or rather, *were disappeared*, in large part by humans – during the course of the currently ongoing and anthropogenically propelled "sixth mass extinction".[8] While these extinctions have at times occurred somewhat unnoticed and in many cases only indirectly as a result of human activity, other instances have been more deliberate, and it must be noted that even when people *have* been aware of extinctions approaching, understandings of this process, and of ecological change more generally, are historically specific.[9] The huia is a stark case in point: hunted to extinction around the turn of the nineteenth-to-twentieth century – to a significant extent at the behest of ornithologist and statesman Walter Buller, who was aware of how endangered it was – it highlights radical shifts in how extinction has been viewed.

The anthropogenic nature of this sort of environmental violence ironically drives the arguably anthropocentric calls for the implementation of de-extinction technologies.[10] A kind of doubling, and intensifying, is suggested.[11] However, some proponents of de-extinction have attempted to frame this science not as a compounding of anthropogenic effects, but more as a reversal – or at least partial amelioration – of them. Furthermore, there have been attempts to justify de-extinction agendas in terms of "moral" imperatives, as a sort of "atonement" for humans' – or more accurately, *some* humans' – ecological sins. In the face of what Gerardo Ceballos, Anne H Erlich and Paul R Erlich term an "ongoing biotic genocide",[12] Tracey Heatherington wryly notes how "the moral terrain of extinction is tremendously evocative for the genetic imagination".[13] However, Beth Shapiro – an expert in ancient DNA research and

[7] ibid., p.2.
[8] This alignment is in part because the resurrection of species that became extinct more recently poses fewer biotechnological challenges.
[9] See, for example, Fletcher (2014), pp.2-3; Markku Okansen and Helena Siipi (eds), *The ethics of animal re-creation and modification: reviving, rewilding, restoring* (Basingstoke and New York: 2014), pp.1-3.
[10] However, it should also be noted that it would be problematic to assume complete continuity between the people who endangered a species, and those who would like it to be brought back, and it is vital to remember that not all groups of humans have played equal parts in environmental destruction.
[11] Indeed, Fletcher uses the policy sciences notion of the "wicked problem" to characterise "the biodiversity crisis – and the associated problem of extinction" (p.5). See, for example, Fletcher (2014), pp.5-7.
[12] Gerardo Ceballos, Anne H Erlich, and Paul R Erlich, *The annihilation of nature: human extinction of birds and mammals* (Baltimore: 2015), p.x.
[13] Tracey Heatherington, "From ecocide to genetic rescue: can technoscience save the wild?" in Genese Marie Sodikoff (ed), *The anthropology of extinction: essays on culture and species death* (Bloomington: 2012), p.49.

cautious supporter of technologies considered part of the broad fold of "the science of de-extinction" – observes that, "Bringing these species back goes some way to mitigate the guilty conscience… But mitigation of guilt is not a compelling reason to bring something back to life."[14] Indeed, critiques of de-extinction caution that, among other things, it could cause further neglect of the conservation of existing species, and philosophical questions have been raised as to the ontological status and authenticity of *what* exactly would be being put back.[15] Furthermore, given the glaring issues for animal wellbeing likely involved in many practices of de-extinction,[16] in most instances it seems hard to make the case that species would be being put back for reasons beyond the anthropocentric.[17] While de-extinction projects are sometimes rationalized using the idea that revived keystone species might prop up whole ecosystems,[18] certainly at the moment this seems rather optimistic, given the challenges involved in making these species robust enough even to survive themselves.

The rather treacherous illusion of turning back the clock might usefully be substantiated using museological discourses, which have problematized understandings of such ideas as collection, conservation, and curation. De-extinction has parallels with all of these aspects of museum practice, since it necessarily involves the incomplete selection of which species to reintroduce and maintain, where and how to do this, and huge amounts of money to enable and maintain it all.[19] A post-de-extinction landscape might therefore be envisaged as a sort of living museum, not unlike a zoo. Timothy Morton has suggested a related idea for the whole notion of "Nature" itself, which he critiques. In relation to so-called "wilderness" reserves, he has observed how "Nature was a special kind of private property, without an owner, exhibited in a specially constructed art gallery. The gallery was Nature itself, revealed

[14] Beth Shapiro, *How to clone a mammoth: the science of de-extinction* (Princeton and Oxford: 2015), p.26.
[15] See, for example, Douglas Campbell's recent research; Fletcher (2014); Lucia Martinelli, Markku Oksanen, and Helena Siipi, "De-extinction: a novel and remarkable case of bio-objectification" in *Croatian Medical Journal*, vol.55 no.4, August 2014, pp.423-7.
[16] It is important to note here that what is thought to be "good" for a species does not necessarily scale to what is "good" for an individual within that species.
[17] This is not automatically to suggest that anthropocentric reasons are necessarily invalid, however.
[18] See, for example, Shapiro (2015), for example p.10.
[19] The same could also be said of existing, less radical practices of environmental conservation, since these also involve selectiveness, interpretive decision-making, and cost. However, just as critiques of museums hardly ever seek to be arguments against these institutions' existence, to critique approaches within ecological conservation initiatives is certainly not automatically to suggest that they should not happen.

through visual technology in the eighteenth century as 'picturesque' – looking like a picture."[20] His assertion that "landscape" is "a word for a painting, not actual trees and water",[21] further alludes to the complex, longstanding, and two-way mediations between art and environment.

However, if the Anthropocenic post-de-extinction environment might be a museum, then at the moment it seems to be one with little co-ordinated curatorial oversight. The rather substantial list of candidate species mooted for de-extinction does not for the most part appear to derive primarily from an envisioned attempt to restore a particular ecosystem and all its complex biotic interactions. Rather, it is a somewhat incoherent selection which, as Heatherington (among others) notes, almost entirely comprises "charismatic megafauna".[22] Many of these candidate species appear to have a champion who is personally and professionally invested in bringing it back.[23] As this reinforces, just as for the acquisition, preservation, and display of objects in a museum, de-extinction is inevitably informed not just by practical and logistical constraints, but by ideological agendas and political biases, and the so-called "re-wilded" landscape must be seen as highly constructed.[24] Furthermore, a much-discussed question within both the material heritage sector and within ecocriticism is to what point in the past should this "clock" be wound back? Again, any determination of this is necessarily ideological, and as various debates within ecocriticism discuss, there is no "neutral" ground in the Anthropocene.[25] Morton describes humans' dizzying realization of their inexorably destructive entanglements as "a new ecological aesthetics: *dark ecology*… The form of dark ecology is that of noir film. The noir narrator begins investigating a supposedly external situation, from a supposedly neutral point of view, only to discover that she or he is implicated in it."[26] The use of the cinematic analogy implies the possibilities of the arts for grappling with

[20] Timothy Morton, *The ecological thought* (Cambridge MA and London: 2010), pp.5-6.
[21] ibid., p.10.
[22] Heatherington (2012), p.44.
[23] However, this is not to seek to invalidate such motivations, and indeed these are of course not the only sorts of reasons why people might seek for extinct species to be revived.
[24] Jamie Lorimer's use of the notion of "ontological choreography" (after Donna Haraway, after Charis Thompson) is relevant here. See Jamie Lorimer, *Wildlife in the Anthropocene: conservation after nature* (Minneapolis and London: 2015), p.12.
[25] Furthermore, anthropogenic effects stretch back for centuries. And as Slavoj Žižek notes, "One cannot even say that all we need do is restore the situation to its natural balance. To what balance?" Slavoj Žižek, *Living in the end times* (London and New York: 2011), p.350.
[26] Morton (2010), pp.16-7.

how we might attempt to represent and comprehend the Anthropocene, and its characteristic phenomena such as de-extinction.

The preponderance of charismatic megafauna among the candidate species for de-extinction also invites art historical and museological critiques of the distorting effect of canons within art and material culture. "Charismatic" species might be thought of as "exciting" creatures that in life or posthumously have accrued some kind of cultural capital, and as such their relation to less celebrated species parallels the position of canonical artworks in relation to that of everyday objects. It should be noted that charismatic species are by no means necessarily keystone species – i.e. those whose roles are disproportionately influential within ecological networks – just as canonical artworks are not necessarily the most illuminating. However, charismatic species and canonical artworks share the ability to capture public imagination, and by extension generate significant amounts of interest, and with this, resources. Because of their mutual rarity, it is overwhelmingly through images and other visual media that they do this.[27] Technolibertarian inclinations are evident within some de-extinction discourses, and Benjamin Bratton observes how "'De-extinction' is a hot investment vehicle for Silicon Valley riches looking for high-risk/high-reward intellectual property".[28] Museums are already very familiar with the frequently compromising and distorting effects of investment in the form of philanthropy, and museological theorists[29] have interrogated this at length.[30]

[SLIDE] The case study of the huia particularly animates the parallels between de-extinction and museological issues, because practices of collection and circulation, and

[27] Lorimer makes a similar point with respect to wildlife, noting that "Western publics are much more likely to encounter the charismatic organisms about which they are so concerned in print, online, or on TV than they are to meet them in the flesh". Lorimer (2015), p.119.
[28] Benjamin H Bratton, "Notes on extinction, emergence, and biochemical design" (http://extinct.ly/texts/).
[29] See, for example, Shearer West, "The devaluation of 'cultural capital': post-modern democracy and the art blockbuster" in Susan M Pearce (ed), *Art in museums* (London: 1995), pp.80-4.
[30] Indeed, in the Thylacine Cloning Project (1999-2005) at the Australian Museum in Sydney, issues of de-extinction, and museums' need to secure funding, were to collide. As Fletcher has discussed, this initiative "reflected a new, neoliberal era of diminished Government support for public museums and a concomitant need to attract new (primarily corporate) funders" (p.74). Fletcher incisively analyses the optics of this project, describing its "ongoing struggle between science and spectacle" (p.78), and notes the status of the thylacine as an icon, both in terms of the story of its drastic anthropogenic annihilation, and as the media-friendly bottled specimen referred to as the "pickled pup", which – despite yielding scant usable DNA – served as a "populariser" for both the technology and the museum (p.80). See Fletcher (2014), pp.73-83.

certain contemporary Eurocentric beliefs about what constituted "preservation", played a decisive role in the species' annihilation. [SLIDE] Its story demonstrates causalities between visual representation, museums, and extinction, as the bird's fate was sealed knowingly (if not deliberately) largely by Buller, mentioned earlier.[31] [SLIDE] Buller was responsible for the sizeable and lavish *Birds of New Zealand* (from which perhaps the most widely-circulated images of the huia are taken), which ran to three editions in 1873, 1888, and 1905, and was a competitive nod to John Gould's volumes on Europe, Australia, and Great Britain, and John James Audubon's on America. *Birds of New Zealand* is politically charged and elegiac, and reveals Buller's belief – widely shared among Europeans in nineteenth-century New Zealand – that the extinction of native birds was inevitable now that they faced competition from supposedly "superior" introduced European species.[32]

[SLIDE] Until it was effectively too late, Buller apparently understood "conservation" only in museological and documentary terms, and not in ecological ones. Privileging specimens over living huia, he appears to have acted under the influence of an imperialistic fervor that sought – problematically and ironically – to vindicate and even reify Darwin's theory of evolution by natural selection. In the "Prospectus" for the initial edition of his *Birds* book, Buller wrote, "It has been the author's desire to collect and place on record a complete life-history of these birds before their final extirpation shall have rendered such a task impossible",[33] and his hastening of the demise of the huia (and other birds) was framed as a way of immortalizing the last of the species within museum collections. Offering a tracer of the role played by museums in the "imperial Anthropocene", huia skins and taxidermied specimens achieved wide global circulation as a sort of currency of the fledgling colonial museum, as remains of bird species native to Aotearoa were exchanged for historical material culture usually from European collections. Perhaps the most famous example within this process is moa bones, the swapping of which did much to build the new

[31] He died in the UK in 1906, notably a year before what is thought to be Aotearoa's very last huia was sighted.
[32] These sinister beliefs echoed the abhorrent and racist discourses of "dying race" theory, which were also prevalent in New Zealand and elsewhere in the nineteenth century.
[33] Walter Buller, *A history of the birds of New Zealand* (London: 1873), p.iii.

museum collections of nineteenth-century New Zealand in the direction of Eurocentric canons of history.[34]

The dramatic illustration offered by the case of the huia of the relationship between institutional collecting and anthropogenic ecological change suggests that the museum might at times be envisaged alongside such as the factory as an agent of the Anthropocene, or at the least as a sort of quintessentially Anthropocenic product, broadly conceived, wherein humans (or some of them) seek to demonstrate hegemony over the world around them. Furthermore, the huia vividly illustrates a motif that frequently appears within discourses associated with the "new museology", which contends that museums might usefully be understood and critiqued as mausoleums of sorts, because things "die" when they are put into museum collections[35] – art, material culture, even ideas. To extend this parallel further, the museum – like de-extinction – also gives its objects new, perhaps artificial life, and both fields arguably seek to affect illusions of timelessness.

[SLIDE] The case of the huia also highlights the need for de-extinction debates to take into account the potential elisions, framings, and distortions of representation. As Shapiro's discussions suggest,[36] even in de-extinction techniques based on DNA and cloning,[37] it is not quite as simple as *same DNA will produce the same appearance*, but her references to the way species look(ed) are not followed by critical discussion of the slippages, conventions and constraints of image-making.[38] Indeed, the images of the huia widely supposed to be the most "scientific" – the ones from Buller's *Birds* – went

[34] It might be worth noting here that the massive moa bird has also been slated as a candidate species for de-extinction. However, as Shapiro has explained, the moa's lack of living close relatives, and the age of its DNA, present an exceedingly complex, and thus currently unlikely, case in terms of recovery. See Shapiro (2015), p.31.

[35] Paradoxically, however, both museums and de-extinction practices affect a sort of static timelessness to speak to ideas about "life".

[36] For example, in response to a question about whether advances in ancient DNA research mean that a mammoth can now be cloned, Shapiro says: "The problem with this question is that it assumes that, because we can learn the DNA sequence of an extinct species, we can use that sequence to create an identical clone. Unfortunately, this is far from true. We will never create an identical clone of a mammoth." Shapiro (2015), p.11. Furthermore, Fletcher has examined the problematics of the "metaphor of DNA as the code of life" (p.32). See Fletcher (2014), for example pp.31-47; pp.51-4.

[37] It is worth noting here that bird species, apparently, cannot be cloned, and instead require a technique called "primordial germ cell transplantation" (PGCT). See Shapiro (2015), p.191; pp.153-8. This does not change my fundamental arguments, however, as these are not specifically focused on techniques involving cloning, or indeed the huia alone.

[38] This, however, is fair enough, as Shapiro's extensive expertise is not – nor purports to be – in the field of Art History/Visual Culture.

through an elaborate series of remediations to get from the bird to the images in the books. As I have noted in previous research, J G Keulemans, the artist who drew the huia and the other birds in Buller's volumes, was based in the United Kingdom and never actually set foot in Aotearoa. Furthermore, it is likely that he did not encounter live versions of most of the birds he drew. For the 1873 first edition of Buller's *Birds*, the plates are hand-coloured lithographs. Keulemans completed these drawings based on skins and taxidermy, some of which he prepared himself using different but presumably similar species as guides. These were then used as the basis for watercolours, which were checked by Buller who had moved to the UK expressly to supervise the production of his book.[39] Adding further layers to this cycle of potentially distorting remediation, the watercolours were then used to make engravings, which were then printed, and finally hand-coloured through outsourced labour. This was poorly remunerated, and often carried out in unsatisfactory working conditions where the light was bad, which was of course far from ideal given that these workers were trying to represent the subtlest tones, and characteristic bird-like iridescence – of creatures they had almost certainly never seen alive. [SLIDE] For the second edition of 1888, chromolithography was used, and the images were limited to what could be achieved working with six colours. While colouration is of course critical to not misleading in the visual representation of natural specimens, as Jennifer Roberts notes in her excellent book *Transporting visions: the movement of images in early America*, "color was one of the least portable qualities of ornithological specimens".[40] Buller's approach to his book's images stands in marked contrast to Audubon's for *Birds of America* from earlier in the nineteenth century (1827-38), which Roberts incisively describes. [SLIDE] Audubon's approach involved "working in the field with freshly killed birds that he had shot himself",[41] and adhered to a strict and richly suggestive 1:1 scale throughout. Something particularly fascinating about the case of the huia is that there appear to be no known photographs of the living birds, despite the species' twentieth-century extinction date. This seems even stranger when one considers that various huia were kept in captivity – sometimes expressly *for*

[39] This meant, however, that even Buller was away from most of the living examples, and thus unable to compare the representations more directly.
[40] Jennifer Roberts, *Transporting visions: the movement of images in early America* (Berkeley and Los Angeles: 2014), p.109.
[41] ibid., p.71.

observation – long after photographic technologies were widely used.[42] As striking as this is, however, the existence of photographs of huia would do little to change my arguments here. Like drawings, photographs distort – especially when heavily reliant on established pictorial conventions, as many photographs were in the nineteenth century – and, in terms of their success in reproducing detail, photographs in this period were often grainy, blurry, badly-lit or worse, so were thought by some to fare worse than "scientific" illustration. Furthermore, differences between sensory perception in humans and non-human animals surely render human assessments of such as visual likeness obsolete.[43] If a candidate species for de-extinction's ocular capacities differed from people's, then it is far from certain that the visual characteristics that helped individuals within that species to interact would have been adequately captured by images humans made of them,[44] and perhaps less certain still that these characteristics would translate back so as to be expressed in resurrected members of a species made using any de-extinction method informed by visual representations.

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[42] In previous research, I have examined the somewhat anachronistic approach to scientific representation employed in the first two editions of Buller's *Birds* in relation to Lorraine Daston and Peter Galison's work on the development of the notion of objectivity. The images in Buller's books appear to conform to a generalising paradigm of natural history illustration, which Daston and Galison would describe as "truth to nature". This is despite the fact that they were made during a period in which mechanical reproduction was, as Daston and Galison show, transforming scientific representation and reconfiguring notions of the "scientific self" towards the idea of the self-abnegating and non-selective observer. My previous research discussed some potential epistemological implications of Buller's chosen representational convention, and examined the possibility that his awareness (and indeed ready acceptance) of the imminent extinction of many of these bird species might have contributed to his decision to illustrate the birds in this non-specific, archetypal, and memorialising way. Furthermore, Buller's gravely deleterious interactions with such as the huia rendered any posture as a non-interfering observer untenable. For discussion of historical shifts in scientific illustration and the development of the notion of "objectivity", see Lorraine Daston and Peter Galison, *Objectivity* (New York: 2007).

[43] For example, as Francisco J Varela, Adrian G Palacios, and Timothy H Goldsmith note, "The role of color vision in an animal's perception, behaviour, and ecological setting, and its underlying retina and neuronal mechanisms vary enormously in different groups of animals. Amidst this diversity, birds have arguably the most elaborate and interesting color vision". Francisco J Varela, Adrian G Palacios, and Timothy H Goldsmith, "Color vision of birds", in H Philip Zeigler and Hans-Joachim Bischof (eds), *Vision, brain, and behavior in birds* (Cambridge MA and London: 1993), p.77.

[44] This applies to photographs too.

[SLIDE] In highlighting the museological and art-historical debates that might enrich discourses around de-extinction, I seek to be mindful of how, as Clark argues, much environmental criticism might be "vulnerable to delusions that the sphere of cultural representations has more centrality and power than in fact it has".[45] Furthermore, my aim is not to imply that the analogy between museums and the Anthropocene is anywhere near a perfect fit. Living things must in so many ways be understood differently to material culture, and indeed a criticism of de-extinction is its problematic objectification and commoditisation of living things.[46]

The cinematically-heralded notion of de-extinction must also not obscure the more modest interventions nested within the term, which might concern such as small genetic modifications within populations of still-extant species, or the use of assisted reproductive technologies ("ARTs")[47] for species termed "living dead". It is therefore important not to make a so-called "straw man" out of de-extinction by focusing only on its most outlandish proposals and manifestations. Indeed, Shapiro insists that for her, "The task ahead is not to make perfect replicas of species that were once alive".[48] While this might seem to neutralize my argument's concerns around the accuracy of the visual record, it implicitly assumes that what constitutes a "perfect replica" is actually knowable. Further, these more minimal interventions into species diversity might call into question some scientists' utilization of the optics of "de-extinction" for what arguably could also be presented as more modest proposals.[49]

It is perhaps worth noting that Buller's images of the huia, surrounded by little foliage and lots of space, are close to what Roberts has referred to as the "bird-on-a-stick" mode of natural history illustration.[50] This format perhaps has the effect of belying the complex ecological entanglements of the species – entanglements that humans too are part of, and which arguably obscure our ability to conceive of the Anthropocene at the distance to which we are accustomed in practices of "scientific" looking. As Ed

[45] Clark (2015), p.21.
[46] See Martinelli, Okansen, and Siipi (2014).
[47] See Heatherington (2012), p.41.
[48] Shapiro (2015), p.205.
[49] However, if, as Žižek cautions, "one should imagine a possible global disaster: [as] no big bang, just a small-scale interruption with devastating global consequences", by this logic "smaller" interventions should not necessarily be conceptualised as less controversial. Žižek (2011), p.350.
[50] Roberts (2014), p.97.

Ayres has observed, "We are being confronted by something so completely outside our collective experience that we don't really see it, even when the evidence is overwhelming".[51] This reinforces the notion that the Anthropocene is facilitated in part by a crisis of representation, which – in its operations on both macro and micro levels – might be impossible fully to overcome. While this paper does not seek to posit uncertainties around the visual record as in themselves necessarily an argument against de-extinction practices, it does hope to suggest the importance of plurality within the sources considered when trying to get to know lost species. For the huia and a great number of other lost species, their representation and understanding in indigenous knowledge systems and practices are key parts of this.

Similarly floating in space – like the "bird-on-a-stick", ostensibly devoid of systemic interactions – is the Earth in pictures taken during the Apollo Eight mission, the first images of their kind. In a fascinating analysis, Clark describes one of these as a quintessential symbol of the Anthropocene with multiple available readings. It can be seen, he points out, variously "as an icon of life's almost unbearable fragility; as the achievement through technology of the age-old dream of a god's-eye view; an instance of the contingent privilege of vision in the human sense of what something 'really' is… a terrifying view of its target from a weapons platform."[52] This last part links uncannily with the images of huia in Buller's books, since his observations of these birds in the wild were usually followed by their being shot.[53] Their attitudes as recorded in his books might therefore be read as those of birds just before their deaths. Clark's notion of the "weapons platform" suggests advanced technology turning in on itself, and warns of the perils of the kind of anthropocentric hubris that eradicated such as the huia, and – some might argue – now attempts to bring extinct species back.

[51] Ed Ayres quoted in Žižek (2011), p.327.
[52] Clark (2015), p.30.
[53] For one perspective on relationships between hunting and how killed animals have been framed, see Garry Marvin, "Enlivened through memory: hunters and hunting trophies" in Samuel J M M Alberti, *The afterlives of animals: a museum menagerie* (Charlottesville and London: 2011), pp.202-17.

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